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Attorney's Docket No.: 10015191-1
Response dated March 11, 2004
Reply to Office action dated December 12, 2003

Remarks

I.   Claim status

Claims 1-20 were pending.

Claims 21-34 have been added.

The Examiner has indicated that claims 9, 10, and 18 would be allowable if rewritten in independent form.

The Examiner has rejected claims 1-8, 11-17, 19, and 20.

II.   Claim rejections

A.   Claims 1-3, 11-14, 19, and 20

The Examiner has rejected claims 1-3, 11-14, 19, and 20 under 35 U.S.C. § 103(a) over Willsie (U.S. 5,120,940). For the purpose of the following discussion, the examiner is reminded that (emphasis added):

> To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the references or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not on applicants' disclosure.

MPEP § 706.02(j) (emphasis added). Furthermore, as pointed out by the Patent Office Board of Appeals and Interferences:

> The examiner should be aware that "deeming" does not discharge [her] from the burden of providing the requisite factual basis and establishing the requisite motivation to support a conclusion of obviousness.

Ex parte Stern, 13 USPQ2d 1379 (BPAI 1989).

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1.   Claims 1, 13, and 20

Each of claims 1, 13, and 20 recites that non-graphical bar code regions are trimmed from the input image based upon estimated position coordinates for a detected graphical bar code candidate to produce a trimmed graphical bar code candidate for decoding.

The Examiner has indicated that (emphasis added):

> Regarding claim 1, 13 and 20, although Willsie does not specifically disclose the operation of trimming the non graphical bar code regions, such limitations are merely a matter of design choice and would have been obvious in the system of Willsie. Willsie teaches that the morphological operations including erosion and dilation can be used on non graphical objects such as large and small clutters, signature etc. in order to reduce the false readings from the barcode reader. The limitations in claims 1, 13 and 20 do not define a patentably distinct invention over that in Willsie since both the invention as a whole and Willsie are directed to accurately extract or detect the bar code symbols. The use of trimming or cropping for non graphical bar code regions before extracting or detecting bar code is inconsequential for the invention as a whole and presents no new or unexpected results, so long as the non graphical bar code regions have been successfully reduced or eliminated. Therefore, to have morphological operations to remove the background content in Willsie would have been a matter of obvious design choice to one of ordinary skill in the art.

To summarize, the Examiner has based her rejection of claims 1, 13, and 20 on a reference (Willsie) that fails to teach or suggest elements recited in these claims. To make-up for the failure of Willsie to teach or suggest these recited elements, the Examiner has argued that consideration of these claim elements can be avoided by interpreting each of claims 1, 13, and 20 "as a whole" corresponding to a "gist" or "thrust" of an invention. However, the MPEP explicitly provides that "interpreting the claimed invention as a whole requires consideration of all claim limitations" (MPEP 2116.01) and "distilling an invention down to the 'gist' or 'thrust' of an invention disregards the requirement of analyzing the subject matter 'as a whole' (MPEP 2141.02). Accordingly, the Examiner has failed to establish a proper *prima facie* case of obviousness under 35 U.S.C. § 103(a) and her rejection of claims 1, 13, and 20 must be withdrawn.

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Moreover, contrary to the Examiner's assertion, one of ordinary skill in the art at the time of the invention would not have been led to the inventive trimming feature recited in each of claims 1, 13, and 20. Indeed, not only does Willsie fail to teach or suggest anything about trimming non-graphical bar code regions from an input image, Willsie teaches that his invention only passes information relating to the location of the bar code to a bar code reading program that reads the bar code from the full input image (see col. 4, lines 51-57). Thus, in accordance with Willsie's approach there is no need for any trimming operation because his bar code reading program is able to read the bar code based on the input image and the bar code location information received from Willsie's invention. Accordingly, since there is no need for any type of trimming operation in Willsie's approach, one of ordinary skill in the art at the time of the invention would not have been motivated to include such an operation in Willsie's system, contrary to the Examiner's assertion.

In addition, the Examiner has indicated that Willsie applies morphological operations to the document 10. These morphological operations, however, do not constitute a trimming of "non-graphical bar code regions from the input image *based upon estimated position coordinates* for a detected graphical bar code candidate," as recited in claims 1, 13, and 20. Indeed, Willsie applies these morphological operations to the document 10 – along with an area test, a line-run length test, and an extreme boundary test – in order to determine the "position of the four corners of the full resolution barcode image" (col. 4, lines 53-54). In other words, the morphological operations do not remove non-graphical bar code regions from the document 10 based upon estimated position coordinates for the barcode 12 because the position coordinates are not known until after the morphological operations have been applied.

For at least the reasons explained above, the Examiner's rejection of independent claims 1, 13, and 20 under 35 U.S.C. § 103(a) over Willsie should be withdrawn.

2. Claims 2, 3, 11, 12, 14, and 19

Each of claims 2, 3, 11, and 12 incorporates the features of independent claim 1, and claims 14 and 19 incorporate the features of independent claim 13. Therefore, claims 2, 3, 11, 12, 14, and 19 are patentable for at least the same reasons explained above.

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B.   Claims 4-6 and 15

The Examiner has rejected claims 4-6 and 15 under 35 U.S.C. § 103(a) over Willsie in view of Klancnik (U.S. 5,550,365).

Each of claims 4-6 incorporates the features of independent claim 1 and claim 15 incorporates the features of independent claim 13. Since Klancnik does not make-up for Willsie's failure to teach or suggest anything about the trimming elements recited in claims 1 and 13, claims 4-6 and 15 are patentable over Willsie and Klancnik for at least the same reasons explained above. These claims also are patentable for the following additional reasons.

Each of claims 4-6 and 15 recites that the non-graphical bar code regions are trimmed based upon intensity histogram profiles obtained by summing intensity values along orthogonal axes corresponding to the computed angular orientation of the detected graphical bar code candidate. Not only does Klancnik fail to teach or suggest anything about trimming non-graphical bar code regions from an input image, Klancnik also fails to teach or suggest anything about obtaining intensity histogram profiles by summing intensity values along orthogonal axes corresponding to the computed angular orientation of a detected graphical bar code candidate, as recited in each of claims 4-6 and 15. In accordance with Klancnik's approach, pixels are processed along scan lines that are oriented along rows and columns of the input image (see col. 3, lines 40-44); these scan lines are not oriented along orthogonal axes corresponding to the computed angular orientation of a detected graphical bar code candidate. Indeed, the histograms in Klancnik's approach are computed without regard to the orientation of the bar code.

C.   Claims 7-8 and 16-17

The Examiner has rejected claims 7-8 and 16-17 under 35 U.S.C. § 103(a) over Willsie in view of Shellhammer (U.S. 5,523,552).

Each of claims 7 and 8 incorporates the features of independent claim 1 and each of claims 16 and 17 incorporates the features of independent claim 13. Since Shellhammer does not make-up for Willsie's failure to teach or suggest anything about the trimming elements

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recited in claims 1 and 13, claims 4-6 and 15 are patentable over Willsie and Shellhammer

for at least the same reasons explained above.

III.   Conclusion

For the reasons explained above, all of the pending claims are now in condition for

allowance and should be allowed.

Charge any excess fees or apply any credits to Deposit Account No. 08-2025.

Respectfully submitted,

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